

What is claimed is:

1. A projector comprising:

a projection optical system for projecting an image onto a projection surface;

5 optical zoom means for actuating said projection optical system to enlarge and reduce the image projected onto said projection surface;

distortion correcting means for correcting a distorted quadrilateral image which is projected onto said projection surface when an optical axis of said projection optical system is oblique to said projection surface in vertical and horizontal directions, into a square corrected image;

10 zoom setting detecting means for detecting a zoom setting of said optical zoom means; and

corrective data generating means for generating corrective data to be set in said distortion correcting means based on the zoom setting detected by said zoom setting detecting means.

2. The projector according to claim 1, wherein said zoom setting detecting means comprises:

a detecting gear rotatable in ganged relation to said projection optical system which is actuated by said optical zoom means; and

5 a detecting element for detecting an angular displacement of said detecting gear.

3. The projector according to claim 2, wherein said optical zoom means comprises:

a ring gear mounted on an outer circumferential surface of a projection lens of said projection optical system, said detecting gear being in mesh with said ring gear.

4. The projector according to claim 1, wherein said distortion correcting means corrects said projected image such that one of vertexes located on the opposite ends of one of the two diagonal lines of the square corrected image is positioned on a side of the outer edge of a projected range of the projected image, and the other one of the vertexes is positioned on a side adjacent to said side.

5. The projector according to claim 1, wherein said distortion correcting means corrects said projected image by correcting two sides of the projected image in the vertical direction based on a vertically inclined angle of said optical axis with respect to said projection surface, fixing one of the two corrected sides, and manually moving the remaining three sides of the projected image with respect to the fixed side within the projected range of said projected image.

6. A method of correcting image distortion, comprising the steps of:
providing a projector having a projection optical system for projecting an image onto a projection surface, and optical zoom means for actuating said projection optical system to enlarge and reduce the image projected onto said projection surface;
detecting a zoom setting of said optical zoom means;
generating corrective data based on the zoom setting which is

detected; and

correcting a distorted quadrilateral image which is projected onto
10 said projection surface when an optical axis of said projection optical system
is oblique to said projection surface in vertical and horizontal directions, into
a square corrected image based on said corrected data which is generated.

7. The method according to claim 6, wherein said step of correcting
a distorted quadrilateral image comprises the step of correcting said
projected image such that one of vertexes located on the opposite ends of
one of the two diagonal lines of the square corrected image is positioned on
5 a side of the outer edge of a projected range of the projected image, and the
other one of the vertexes is positioned on a side adjacent to said side.

8. The method according to claim 6, wherein said step of correcting
a distorted quadrilateral image comprises the step of correcting said
projected image by correcting two sides of the projected image in the
vertical direction based on a vertically inclined angle of said optical axis with
5 respect to said projection surface, fixing one of the two corrected sides, and
manually moving the remaining three sides of the projected image with
respect to the fixed side within the projected range of said projected image.